

CAPT. TALCOTT'S OBSERVATIONS—NORTHERN BOUNDARY OF OHIO, &c.

---

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

*A report from the Engineer Office, together with a report of Captain Talcott, in relation to the "latitudes and longitudes of several places in the vicinity of the northern boundary of the States of Ohio, Indiana, and Illinois."*

---

JUNE 20, 1834.

Read, and laid upon the table.

---

WAR DEPARTMENT, June 18, 1834.

SIR: I have the honor to transmit, herewith, a report from the Engineer Office, together with a report of Captain Talcott, in relation to the "latitudes and longitudes of several places in the vicinity of the northern boundary of the States of Ohio, Indiana, and Illinois," called for by a resolution of the House of Representatives of the 11th instant.

Very respectfully,

Your most obedient servant,

Hon. JOHN BELL,

*Speaker of the Ho. of Reps.*

LEW. CASS.

---

ENGINEER DEPARTMENT,

Washington, June 17, 1834.

SIR: In compliance with the resolution of the House of Representatives of the 11th instant, I have the honor to submit, herewith, a copy of Captain Talcott's report on the result of the observations made by him during the past season, for the purpose of ascertaining the latitude and longitude of several places in the vicinity of the northern boundary of the State of Ohio.

With great respect,

I have the honor to be,

Sir, your obedient servant,

WM. H. C. BARTLETT,

*Lieut. of Engs. & Ass't to Chief Eng.*

Hon. LEWIS CASS, *Secretary of War.*

To Gen. C. GRATIOT, *Chief Engineer* :

SIR : I have now the honor to communicate to you the result of the observations made last summer, under the law of July, 1832, requiring that astronomical observations be made at certain points therein designated, with a view to the adjustment of the northern boundary of the State of Ohio.

It has been before stated that this was intended only as a *preliminary examination* of the several points, with a view to preparing for the use of *larger instruments*, and for ascertaining what *surveys* would be necessary, in connexion with the observations, to execute fully the law above referred to : and it would not be out of place to state here, that the result of these observations is communicated, as giving only a *tolerably near approximation* to the relative position of several of the points designated ; but not as furnishing that exact information which the *law* and the *importance* of the subject require, and which can only be obtained by using *larger instruments*, and by making with them numerous observations.

These observations were made at five stations, at or near to four of the points specified in the law. The first station was at "Bay point," or at the "most northern cape of Maumee bay ;" this station was on the extremity of the cape, and is considered to be as near as possible to the point specified in the law. The result of the observations made here, gives for the latitude of the station  $41^{\circ} 44' 02.4''$  north, and for the longitude  $83^{\circ} 18' 55.5''$  west from Greenwich. This position was found, from its low and wet condition, very unfavorable for observations : I, therefore, removed the instruments to Turtle island, a small island near the mouth of Maumee bay, and bearing from the station on the cape  $N. 46^{\circ} 05' E.$  by an azimuth of the sun. The observations made here give for the latitude of the station on Turtle island  $41^{\circ} 45' 08.8''$  north ; and for its longitude  $83^{\circ} 17' 22.5''$  west of Greenwich, or  $1^{\circ} 06.4''$  north, and  $1^{\circ} 33''$  east of Bay point. This station was on the southwest extremity of Turtle island, and it is intended to connect it trigonometrically with Bay point ; and it is also proposed to extend the triangulation up the Maumee, bay and river, to the same parallel of latitude as "the south bend of Lake Michigan," or to where a "due east line from the most southern bend of Lake Michigan will intersect the Maumee bay or river," which will be *very near the parallel of latitude*, passing through the most southern bend of the lake, but a *little north* of it, and a quantity dependent on the difference of *altitude* of the two lakes. This difference will be equal to the *cosine* of the latitude of the south bend of Lake Michigan, multiplied into its *elevation above Lake Erie*. The same triangulation will also be made to include that point on the Maumee bay or river, where a line from the most southern bend of Lake Michigan, to the most southern point of the boundary of the United States, in Lake Erie, will intersect the shore of the bay or river ; and, as will hereafter be shown, it will be something more than a mile north of the "due east line" from the south bend of Lake Michigan.

The third station was on "Gull island." This is a small island in Lake Erie, south of "Middle island," and distant from it, by estimate,  $1\frac{1}{2}$  miles : it is about 100 yards long and 25 broad, and in the form of a crescent. The station was on the east end of the island. The boundary of the United States lies *north* of this island, and between it and Middle island. This station was selected as the nearest position that could be taken to the most southern point in the boundary of the United States in

Lake Erie. The observations made here place it in latitude  $41^{\circ} 39' 30.5''$  north, and in longitude  $82^{\circ} 33' 54''$  west from Greenwich.

The fourth station was at the most "southern bend of Lake Michigan," on the beach of the lake, at high water mark, and about the middle of a reach of the lake which lies east and west, and is about two miles in extent. The observations at this place were more numerous than at any of the other stations, and give for its latitude  $41^{\circ} 37' 07.9''$  north, and longitude  $87^{\circ} 09' 06''$  west from Greenwich.

The fifth station was on the east bank of the Mississippi river, about two hundred yards from the water, and near the dwelling of a Mr. Hubbard ; it was opposite an island in the river, said to be the first above the rapids. This station, from the observations made at it, is found to be in latitude  $41^{\circ} 38' 10.5''$  north, and in longitude  $90^{\circ} 13' 45''$  west, and, by observations made at the *fort on Rock island*, appears to be  $7^{\circ} 00.8''$ , or 8 miles 115 yards north, and  $13^{\circ} 30''$ , or 11 miles 1,141 yards east of that place. A due west line, therefore, from the south bend of Lake Michigan, will intersect the Mississippi river  $1^{\circ} 02.6''$  south of this station, or about *seven miles* north of the fort on Rock island.

I shall now proceed, by the aid of such information as I have been able to collect from the foregoing observations, and from the most authentic maps, to examine the relative position of a "*due east* line from the most southern bend of Lake Michigan," and "*the most southern point* in the boundary line of the United States in Lake Erie."

The commissioners for settling this part of the boundary of the United States have decided that, from the eastern extremity of the lake, it runs "thence southerly and westerly *along the middle of Lake Erie*, in a direction to enter the passage immediately south of Middle island." This passage, by the map accompanying their report, is considerably *south of the middle of the lake*; and to ascertain if the most southern point in the boundary will be found in that passage, it is necessary to determine if any part of the line along the "*middle of the lake*" makes south of that passage, before it arrives at that part of the lake where it must leave "*the middle*" to take a direction to enter that passage. By the map of the commissioners above referred to, "*Point Pelé*" appears to be laid down from actual survey. From a mere inspection of a map of Lake Erie, it will appear evident that the line "*along the middle of the lake*" will make its greatest southing directly south of "*Point Pelé*." To obtain an approximation to the latitude and longitude of that point, I measured upon the map of the commissioners its distance, north and east, from Gull island, and thereby find "*Point Pelé*" in latitude  $41^{\circ} 51' 42.6''$  north, and longitude  $82^{\circ} 23' 34''$  west from Greenwich. The same map does not embrace that part of the *southern shore* of Lake Erie immediately south of Point Pelé ; I, therefore, had recourse to Tanner's map of Ohio, as furnishing the most correct data for determining the latitude of that point on the shore of the lake, which *lies directly south* of Point Pelé. To take the difference of the latitude of this point of the lake shore, and the "*north cape of Maumee bay*," it was believed would be the most accurate way of determining its latitude, because the land surveys are supposed to give the *shore* of the lake with considerable accuracy. By this process, I find that the meridian which passes through *Point Pelé* will intersect the south shore of the lake in latitude  $41^{\circ} 25' 35.9''$  north, and it appears that this intersection is very near the most southern bend of Lake Erie. This meridian, therefore, is very nearly

perpendicular to each shore of the lake. Having determined the meridian on which will be found that point of the boundary line which lies furthest south, there remains to be determined in what latitude the line along the "middle of the lake" intersects that meridian. It is evident many lines may be drawn dividing the lake so as to leave as much of its surface north as south of these lines, but it is conceived that a line along the "middle," means a line that divides into two equal parts a series of *parallel elements* of the surface of the lake. It would seem that the most natural as well as the most simple process would be to bisect the elements formed by meridian circles; and as no principle occurs to me which should give any other system of elements a preference, I shall take for the series of elements to be divided into *two equal* parts, those formed by *meridian circles* of the sphere. The problem, therefore, is reduced to dividing into two equal parts an element of a spherical surface, between the parallels of latitude of  $41^{\circ} 25' 35.9''$  and  $41^{\circ} 51' 42.6''$  north. Now, the arc to be divided being very small, the sine of the latitude of the point required is equal to half the sum of the sines of the latitude of the two extremities. This point is, by this calculation, found to be in latitude  $41^{\circ} 38' 38''$ , and, as has been before stated, its longitude is  $82^{\circ} 23' 34''$ . This may be considered as a near approximation to the latitude and longitude of the "most southern point of the boundary of the United States in Lake Erie." It appears very probable, from the foregoing statement of the result of observations made at "Gull island," and at the "south bend of Lake Michigan," that a "due east line" from the most southern bend of that lake will not intersect the boundary line of the United States in Lake Erie, but will pass south of the most southern point in that line  $1' 30.1''$ , or about 1 mile 1,440 yards; but this *near approximation* shows the necessity of a survey to include each shore of the lake, and an accurate determination of the latitude of those points between which the most southern point of the boundary of the United States is supposed to lie. Assuming as correct the foregoing determination of the latitude and longitude of the most southern bend of Lake Michigan, and the most southern point of the boundary of the United States in Lake Erie, then a great circle of the sphere passing through these two points will intersect the meridian through the "north cape of Maumee bay;" in latitude  $41^{\circ} 39' 16.6''$ , or 5 miles 841 yards south of that point. This will enable any person to determine, upon a map of Ohio, very nearly the position of that intersection. I have before stated that the location of this point would be fixed by the same survey that it will be advisable to make to locate the point where a "due east line" from Lake Michigan will intersect the river or bay. By Tanner's map of Ohio, it appears that the point where it intersects the Maumee river is  $4' 45.8''$  south of Bay point, and  $7' 15''$  west of it, or that this point is in latitude  $41^{\circ} 39' 23.4''$  north, and longitude  $83^{\circ} 26' 10.5''$  west from Greenwich. It also appears from the map of the commissioners, (which is always used when it embraces the required points,) that this line, after crossing the Maumee river, will intersect the shore of Lake Erie in latitude  $41^{\circ} 39' 13''$  north, and in longitude  $83^{\circ} 11' 35''$  west from Greenwich.

Accompanying this are two tables: No. 1, showing, in a tabular form, the latitude and longitude of the several points designated in the law, or of the stations at which the observations were made. No. 2 exhibits the latitude and longitude of several places in the United States where observations were made during the summer; and, though entirely disconnected with the

foregoing, it is appended as containing information that may be useful for correcting or verifying the maps of the States, in the absence of that which is more correct. It should be observed that the latitude of these points was deduced from a single set of meridian observations, with a reflecting and repeating circle; and that the longitude is that deduced from a mean of the time given by two chronometers.

In the foregoing report I have endeavored to exhibit, as clearly as possible, the progress made in the execution of the law, requiring the position of those points to be accurately determined by astronomical observations.

In October last I had the honor to submit an estimate of the probable expenses, for the current year, of such a party as I supposed would be adequate for the execution of the duty yet required to fulfil the intentions of the law; and I have now to add that arrangements have been made to procure, in season for this year's operations, the instruments required for the service.

In the discharge of the foregoing duties, I have been assisted by Mr. S. V. Talcott, Mr. Lyon, who was appointed by the War Department to assist in this duty, having declined the service at too late a period to allow of another appointment being made in season to render any assistance in making the observations of the last year.

The above is respectfully submitted by

Your obedient servant,

A. TALCOTT,

*Captain of Engineers.*

NORFOLK, Va., January 17, 1834.

### No. 1.

*A TABLE of the latitude and longitude of certain points required to be determined by the law of July, 1832, with a view to the adjustment of the northern boundary of the State of Ohio.*

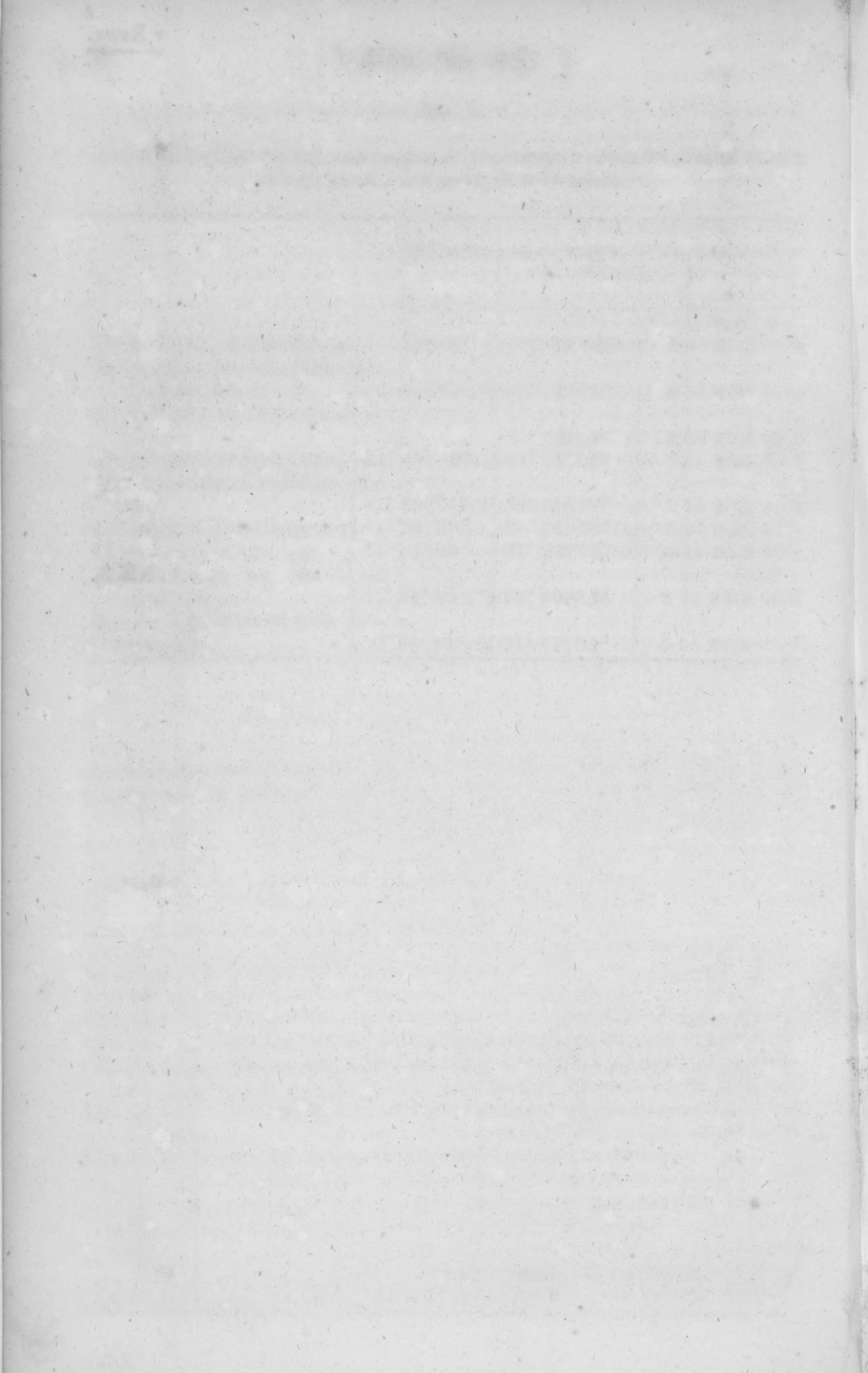
	Latitude north.	Longitude in degrees.	Longitude in time.
			h. m. sec.
Bay point, or north cape of Maumee bay, -	41° 44' 02".4	83° 18' 55".5	5 33 15.7
Turtle island, Lake Erie, -	41° 45' 08".8	83° 17' 22".5	5 33 09.5
Gull island, Lake Erie, -	41° 39' 30".5	82° 33' 54"	5 30 15.6
South bend of Lake Michigan,	41° 37' 07".9	87° 09' 06"	5 48 36.4
Station on Mississippi river,	41° 38' 10".5	90° 13' 45"	6 00 55.0
Most southern point of United States boundary in Lake Erie,	41° 38' 38"	82° 23' 34"	5 29 34.3
The intersection of } Maumee a line drawn from } river, the southern bend } of Lake Michigan } to the southern } point of the United } States boundary in } Lake Erie, } with Lake Erie,	41° 39' 23".4	83° 26' 10".5	5 33 45.2
	41° 39' 13"	83° 11' 35"	5 32 46.8

*A TABLE of the latitude and longitude of several places in the United States.  
The longitudes are west from Greenwich.*

	Latitude north.	Longitude in degrees.	Longitude in time.
			h. m. sec.
Fort Adams, Rhode Island, -	41° 28' 39".1	66° 26' 52".5	4 45 27.6
United States arsenal, Watervliet, New York, -	42° 43' 36".7	73° 41' 49".5	4 54 47.3
Light-house at Erie, Pennsylvania, -	-	80° 02' 55".5	5 20 11.7
Light-house at Fairport, Ohio, -	41° 45' 40"	81° 11' 27"	5 24 45.8
Detroit, ("Mansion House Hotel,") -	42° 20' 01".2	82° 57' 21"	5 31 49.4
Niles, Michigan Territory, -	41° 50' 09"	86° 06' 28".5	5 44 25.9
Light-house at Chicago, -	41° 51' 40"	87° 31' 37".5	5 49 56.5
Fort Armstrong, on Rock island, Illinois, -	41° 31' 09".7	90° 26' 15"	6 01 49.0
Quincey, N. E. corner of public square, -	39° 56' 01".5	91° 21' 03"	6 05 24.2

1. The following is a list of the names of the persons who have been admitted to the office of the Secretary of the Board of Education, since the last meeting of the Board, and the date of their admission.

Name	Date of Admission	Office
John A. Smith	Jan. 1, 1887	Secretary
John B. Smith	Jan. 1, 1887	Secretary
John C. Smith	Jan. 1, 1887	Secretary
John D. Smith	Jan. 1, 1887	Secretary
John E. Smith	Jan. 1, 1887	Secretary
John F. Smith	Jan. 1, 1887	Secretary
John G. Smith	Jan. 1, 1887	Secretary
John H. Smith	Jan. 1, 1887	Secretary
John I. Smith	Jan. 1, 1887	Secretary
John J. Smith	Jan. 1, 1887	Secretary
John K. Smith	Jan. 1, 1887	Secretary
John L. Smith	Jan. 1, 1887	Secretary
John M. Smith	Jan. 1, 1887	Secretary
John N. Smith	Jan. 1, 1887	Secretary
John O. Smith	Jan. 1, 1887	Secretary
John P. Smith	Jan. 1, 1887	Secretary
John Q. Smith	Jan. 1, 1887	Secretary
John R. Smith	Jan. 1, 1887	Secretary
John S. Smith	Jan. 1, 1887	Secretary
John T. Smith	Jan. 1, 1887	Secretary
John U. Smith	Jan. 1, 1887	Secretary
John V. Smith	Jan. 1, 1887	Secretary
John W. Smith	Jan. 1, 1887	Secretary
John X. Smith	Jan. 1, 1887	Secretary
John Y. Smith	Jan. 1, 1887	Secretary
John Z. Smith	Jan. 1, 1887	Secretary



General Abstract of the number and situation of the State Banks in the several States and Territories of the Union, compiled from returns made in the years 1833 and 1834, to the Legislatures of the several States, and from estimates; together with a statement of the number of Banks, and the amount of Bank capital authorized since the said returns were made out; and also of the situation of the Bank of England, and of the Banks in Canada, as per statements referred to.

Accompanying statements referred to.	States.	No. of Banks.	DUE FROM THE BANKS.						RESOURCES OF THE BANKS.							
			Capital stock paid in.	Notes or bills in circulation.	Profits, includ'g surplus funds, unclaimed dividends, &c.	Amount due to other Banks.	Amount due to depositors.	Total amount due from Banks.	Specie and specie funds on hand.	Notes or bills of other Banks on hand.	Amount due from other Banks.	Discounts, including bills of exch'ge, bonds, mortgages, &c.	Stocks.	Real estate owned by the Banks.	Expenses, &c.	Total resources of the Banks.
Doc. 498—p. 5.	B. Alabama	3	\$2,576,118 89	\$1,238,682 00	\$49,696 31	\$175,690 66	\$659,081 38	\$4,699,269 24	\$286,795 02	\$294,929 00	\$252,869 16	\$3,822,955 44	—	\$39,568 44	\$2,152 18	\$4,699,269 24
	C. Connecticut	21	5,708,015 00	2,557,227 49	276,717 44	202,921 95	900,239 95	9,645,121 83	228,470 14	942,649 80	373,834 00	7,467,329 08	\$475,284 43	117,167 60	40,386 78	9,645,121 83
	D. Georgia	13	6,534,691 02	3,055,003 19	564,520 14	673,431 75	977,802 01	11,805,448 11	1,273,874 02	549,109 49	777,895 82	7,583,011 75	1,209,327 01	357,089 64	55,140 38	11,805,448 11
	E. Kentucky	3	1,875,418 63	838,091 14	515,584 92	637,943 79	331,521 22	4,198,559 70	211,805 72	222,249 67	669,932 87	2,742,388 24	—	300,320 16	51,863 04	4,198,559 70
	F. Louisiana	6	16,064,755 00	3,271,230 00	1,215,357 09	855,873 94	3,038,606 96	24,445,822 99	1,568,293 46	696,139 90	1,053,772 65	20,205,087 76	16,000 00	377,138 08	529,391 14	24,445,822 99
	G. Massachusetts	102	28,236,250 00	7,889,110 67	1,293,279 54	2,881,447 50	11,666,122 90	51,966,210 61	922,309 84	1,796,361 96	3,363,716 29	45,261,008 09	—	791,821 77	—	52,135,217 95
	H. Maine	28	2,727,000 00	1,303,671 00	73,708 94	113,759 81	662,804 61	4,882,944 36	108,403 76	156,226 45	335,510 94	4,157,556 78	—	98,391 30	—	4,856,089 23
	I. Maryland	8	5,270,091 67	1,433,698 42	975,601 41	596,226 68	3,125,035 38	11,400,663 56	595,506 47	924,045 84	430,239 23	8,530,786 44	497,295 61	419,397 22	3,392 75	11,400,663 56
	K. Mississippi	1	2,666,805 45	1,510,426 15	171,605 34	1,020,911 69	545,353 58	5,915,102 21	113,220 47	11,995 22	254,592 59	5,461,464 89	—	62,609 72	11,219 32	5,915,102 21
	L. New York	70	24,780,264 00	15,933,122 62	3,255,571 38	9,541,140 93	17,019,437 43	70,529,536 36	2,372,938 22	6,150,369 19	8,535,767 52	51,479,196 56	351,124 82	1,410,859 18	229,280 87	70,529,536 36
	M. North Carolina	3	1,824,725 00	981,144 00	337,765 60	55,587 58	402,259 22	3,601,481 40	242,142 73	282,689 44	423,618 00	2,368,275 71	44,215 00	240,540 52	—	3,601,481 40
	N. South Carolina	1	1,156,318 48	1,862,442 19	491,409 78	—	579,538 77	4,089,709 22	220,742 35	608,460 00	54,058 99	2,909,121 18	260,957 21	36,369 49	—	4,089,709 22
	O. New Hampshire	22	2,271,300 00	1,238,643 50	154,421 93	—	361,860 09	4,026,225 52	464,171 89	85,953 11	—	3,390,826 43	—	79,124 17	6,149 92	4,026,225 52
	P. Ohio	2	1,986,625 00	648,639 00	94,808 29	464,055 25	124,118 48	3,318,246 02	186,591 25	117,110 00	130,669 33	2,877,875 44	—	6,000 00	—	3,318,246 02
	Q. Pennsylvania	41	17,061,944 51	10,366,232 61	2,592,939 81	2,720,349 37	9,819,140 75	42,560,607 05	2,909,105 66	2,678,175 14	2,636,166 93	31,587,030 58	1,390,074 66	1,211,878 90	148,175 18	42,560,607 05
	R. Rhode Island	51	7,488,748 00	1,268,813 03	123,048 73	—	1,446,889 79	10,327,497 55	401,281 95	—	—	9,150,423 31	—	—	775,792 29	10,327,497 55
	S. Tennessee	1	1,243,827 47	1,520,880 66	163,244 21	73,467 85	125,486 16	3,126,906 35	86,455 58	455,034 47	456,062 42	2,117,371 42	—	—	11,982 46	3,126,906 35
	T. Virginia	4	5,694,500 00	5,598,392 33	194,079 80	634,392 65	2,875,774 90	14,997,139 68	937,751 90	592,998 90	913,476 06	11,752,058 61	150,641 50	649,762 71	450 00	14,997,139 68
	U. Vermont	17	912,000 00	1,468,594 00	109,377 90	—	36,706 35	2,526,478 25	692,632 99	10,688 00	—	1,795,320 26	—	27,422 00	415 00	2,526,478 25
	V. District of Columbia	8	3,337,305 00	1,109,389 82	228,535 18	391,822 97	1,247,655 48	6,314,708 45	432,077 66	308,953 92	525,371 56	3,693,720 12	942,703 82	395,495 65	16,385 72	6,314,708 45
Estimated situation of Banks from which no returns have been rec'd, per statement A,		405	139,416,703 12	65,093,231 82	12,883,273 74	21,039,034 37	55,945,435 41	294,377,678 46	14,254,571 08	16,884,139 50	21,187,554 36	228,352,808 09	5,337,624 06	6,620,956 55	1,882,177 03	294,519,830 67
		101	30,707,089 00	12,645,551 00	3,248,874 63	4,849,362 50	10,419,592 45	61,870,469 58	2,827,133 57	3,945,768 00	3,699,865 68	48,798,524 33	930,685 00	1,558,321 00	110,172 00	61,870,469 58
Aggregate		506	170,123,792 12	77,738,782 82	16,132,148 37	25,888,396 87	66,365,027 86	356,248,148 04	17,081,704 65	20,829,907 50	24,887,420 04	277,151,332 42	6,268,309 06	8,179,277 55	1,992,349 03	*356,390,300 25
Banks chartered, and Bank capital authorized, but not in operation when the above returns were made, per statement B B		43	30,200,000 00													
Total number of Banks and am't of Bank capital in operation and authorized		549	200,323,792 12													

Statement of the accounts of the Bank of England, per schedule marked C C.

Date.	LIABILITIES.			ASSETS.		
	Circulation.	Deposites.	Total liabilities.	Securities.	Bullion.	Total assets.
April, 1834	£19,097,000 00	11,011,000 00	33,108,000 00	25,970,000 00	9,431,000	35,401,000 00

Statement of the situation of the Banks in Upper and Lower Canada, per reports to the Legislature of the Provinces, in December, 1833, and January, 1834, per schedule D D.

Date.	Capital.	Circulation.	Deposites.	Specie.
April, 1834	\$2,529,786 00	\$2,214,177 00	\$1,519,048 00	\$711,068 00

\* The returns from which the foregoing abstract of the situation of the banks in the States of Connecticut, Rhode Island, and Vermont, was compiled, are incomplete; no notice being taken of the surplus funds, or undivided profits, stocks, real estate, or expenses, &c.; in consequence of which some of the banks exhibit an apparent excess of means, and others an apparent deficit. In making up this general abstract, in order to square the accounts of the banks thus situated, the excess has been set down in the column headed "Profits," &c. and the apparent deficit in the column headed "Expenses," and each case designated by an asterisk, thus \*.

In the general aggregate it will also be perceived that the total resources of the banks exceeds the total amount due from them by \$142,152 21. This is produced by the returns of the banks in the States of Maine and Massachusetts, which, it will be seen, are very full and complete, and exhibit exactly this sum over and above their liabilities.